

PATENT APPLICATION

**EXTRUDER**

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PATENT CLAIMS

1. Extruder, having a transfer region that, in an extruder sleeve, is provided with ribs, between which extend flow channels, whereby disposed opposite the sleeve flow channels are flow channels that are formed in the extruder screw, and whereby the sum of the cross-sections of the flow channels, when viewed in the direction of the extrusion, shift toward the sleeve and then toward the screw, characterized in that the ribs (20) of the extrusion sleeve (12), at the ridges that face the screw (14), have a width that is at least one third, in particular at least one half, and preferably approximately 80 to 100% of the width of the flow channels (22), and in that there is provided between the ridges of the ribs (20) of the extruder sleeve (12) and the screw (14) a gap (24) of more than 0.5%, especially of approximately one percent of the diameter of the screw (14).

2. Extruder according to claim 1, characterized in that the gap (24) has a width that is at least two percent of the diameter of the screw (14) and/or is at least 15% of the sum of the heights of the ribs (16, 20).

3. Extruder according to claim 1, characterized in that each rib ridge has a facet or incline (26, 28) in which the gap (24) is increased to at least 3%, in particular more than 5%, of the diameter of the extruder screw (14), and in that the normal of the ridge is inclined relative to the direction of rotation of the screw (14).

5 4. Extruder according to claim 1, characterized in that an incline (28) of the ridge of the sleeve ribs (20), when viewed in the direction of rotation of the screw (14), is a portion of the ridge width, in particular slightly more than one half, and preferably the forward three fifths of the ridge width.

10 5. Extruder according to claim 1, characterized in that the ridges of the ribs (16) of the extruder screw (14) are also inclined, in particular at its front edge as viewed in the direction of rotation.

15 7. Extruder according to claim 1, characterized in that the ridges of the ribs (16, 20) of the extruder screw (14) and/or of the extruder sleeve (12) are provided with a rounded-off portion or a bevel at their front edge as viewed in the direction of rotation.

20 8. Extruder according to claim 1, characterized in that the gap (24) is increased to at least 0.5% merely in a portion of the transfer region, and in the remaining portion is approximately 1% of the diameter of the extruder screw (14).

9. Extruder having an extruder screw that runs in an extruder sleeve, whereby flow channels are provided that extend between ribs and have a prescribed flow cross-section, characterized in that the ribs (16, 20) have a ridge width that is approximately one third of the width of the flow channels (18), in particular approximately one half of the width of the flow channels (18) and preferably approximately 80 to 120% of the width of the flow channels (18), and in that the gap (24) between extruder sleeve (12) and extruder screw (14) is at least 1mm, preferably 1.5 to 3mm.

10. Extruder according to claim 1, characterized in that there is formed, between extruder screw (14) and extruder sleeve (12), a shear gap (24) in which the material that is to be extruded is exposed to elastic flows or shear flows.